## REMARKS

The Office Action Summary correctly notes that claims 1-48 are pending, with claims 1-7 and 14-48 being withdrawn from consideration as drawn to non-elected subject matter. Claims 8-13 stand rejected.

For the record, Applicants note that an Examiner IDS (PTO-892) accompanied the Office Action, but this was not indicated on the Office Action Summary.

Applicants cancel claims 1-7 and 19-48 as drawn to non-elected subject matter. Applicants have amended claim 8 to recite some of the subject matter of original claim 1. New claims 49-54 are supported in the specification at least at page 11, lines 3-4. Claims 9-12 have been amended to recite the article "the." Claims 16 and 17 have been amended to include a comma. No prohibited new matter is believed to have been introduced with the entry of this Amendment. Applicants reserve the right to file a divisional and/or continuation application on any material canceled by way of this or any amendment.

### 1. Restriction Requirement

Applicants note that the restriction requirement was deemed proper and made final. Applicants reserve the right to petition the finality of the requirement. Applicants note that process claims that depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right.

### 2. Claim Objections

Claim 8 stands objected to as being dependent on a non-elected claim. Claim 8 has been amended into independent claim format, thereby obviating the objection.

Claims 9-12 are objected to for starting with an improper article. Claims 9-12 have been amended to now recite the article "the." This objection should now be obviated and withdrawn.

3. **Rejections Under 35 U.S.C. §112, First Paragraph (Enablement)**

Claims 10-11 and 13 stand rejected under 35 U.S.C. §112, first paragraph, as purportedly lacking enablement. The Examiner asserts that in order to practice the invention deposit of the biological organisms would be necessary. The Examiner acknowledged that Applicants state on page 13 of the specification that the cell line F6-C65-H4 was deposited with ATCC.

Applicants have amended page 13, lines 21-27. This paragraph now recites that the three hybridoma cell lines recited in the paragraph have been deposited and assigned patent deposit designation numbers PTA-1358, PTA-1359, and PTA-1357, respectively. A copy of the form from ATCC referring to these deposits is attached hereto.

In view of the amendments to the specification and provision of information to evidence that these hybridomas have been deposited, Applicants submit that the rejection has been obviated. Applicants therefore respectfully request that the rejection be withdrawn.

4. **Rejections Under 35 U.S.C. §112, First Paragraph (Written Description)**

Claims 8-9 and 12 stand rejected under 35 U.S.C. §112, first paragraph, as purportedly failing to comply with the written description requirement. It is asserted that the specification must describe at least a substantial number of the members of the claimed genus or alternatively describe a representative member of the claimed genus which shares a particularly defining feature, to at least a substantial number of the members of the claimed genus, which would enable the skilled artisan to immediately recognize and distinguish its members from others so as to reasonably convey that the applicant had possession of the claimed invention. The Office cites *Vas-Cath, Inc. v. Mahurkar* and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, and the Written Description Guidelines in support of the Office's arguments.

The Office appears to reject claims 8-9 and 12 because (1) the claims are drawn to a vast genus of antibodies (page 6, last paragraph), (2) the antigens must be defined, and (3) allegedly there is no actual reduction to practice. Moreover, the Examiner asserts on page 9 the following:

> ...one skilled in the art would not accept the assertion, which based variant of the polypeptide of SEQ ID NO:2 is capable of promoting, augmenting, or otherwise enhancing cell differentiation, or delaying, repressing, or otherwise inhibiting cell proliferation or tumorigenesis. Therefore, because the art is unpredictable, in accordance with the Guidelines, the description of the embodiment is not deemed representative of the genus of peptides to which the claims refer.

Page 9, lines 12-18.

Applicants respectfully traverse the rejection for the following grounds. First, there is always a strong presumption that an adequate written description of the invention is present in the specification as filed. *See, e.g.*, M.P.E.P. § 2163 at (II)(A).

Second, Applicants assert that the claimed antibodies are not limited to the information described in the above paragraph. The specification states, for example, at page 15, lines 14-17 that the antibodies can be used to detect, diagnose, serotype and treat yeast infections. These antibodies would readily be understood by the skilled artisan to be capable of use in at least these aspects. Applicants note that any enabled use correlates to the entire scope of the claim. *See* M.P.E.P. § 2164.01(c).

Third, there is an actual reduction to practice as discussed in Example 1. Applicants obtained an antibody to 6C5, which was produced by the deposited hybridomas.

Regarding whether the antigens are defined, Applicants provide the sequences from *Candida albicans* which contains the epitope to which the 6C5 antibody binds. Furthermore, based on phage display mapping, Applicants provide a sequence motif for generating more antibodies that is based on the protein from *C. albicans.* As stated by the Federal Circuit in *Noelle v. Lederman*, as long as the antigen is characterized, the applicant can claim an antibody that binds to the antigen. *Noelle v. Lederman*, 69 U.S.P.Q.2d 1508, 1514 (Fed. Cir. 2004).

Applicants more than adequately supply information on the antigen and the epitope to which the antibodies bind.

Accordingly, Applicants submit that a *prima facie* case of lack of written description has not been adduced. Accordingly, in view of the amendments to the claims and above arguments, Applicants respectfully request that the rejection be withdrawn.

**5. Rejections under 35 U.S.C. §112, First Paragraph (Enablement)**

Claims 8-9 and 12 stand rejected under 35 U.S.C. §112, first paragraph because the specification is purportedly not enabling for the scope of the claim. The Office does indicate that the specification is enabling for antibodies produced by any of the hybridoma cell lines recited in the specification, namely 6C5, 5F8, and 5D8. Specifically, it is asserted that the antibodies with specificity for peptides of the general formula G-$X_1$-$X_2$-R is too broad. The Examiner cites to references by Lazar et al. (*Molecular and Cellular Biology*, 1988, 8: 1247-1252), Burgess et al. (*J. Cell. Bio.* 111: 2129-2138, 1990) in support of the argument that protein chemistry is unpredictable.

Applicants respectfully traverse the rejection for at least the following reasons. In order to assert the lack of enablement, the Office must make a *prima facie* case that the invention cannot be made and/or used based on the specification and what was known in the art at the time. This is taken in view of a *Wands* Factor analysis for undue experimentation. A conclusion must be reached by weighing all the factual considerations. M.P.E.P. § 2164.01(b). These factors include (1) the breadth of the claims, (2) the nature of the invention, (3) the state of the prior art, (4) the level of one of ordinary skill, (5) the level of predictability in the art, (6) the amount of direction provided by the specification, (7) the existence of working examples, and (8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. M.P.E.P. § 2164.01(a).

The invention is directed to a class of antibodies that bind to the 6C5 antigen of *Candida albicans*. The amino acid sequence of the 6C5 antigen is provided in Figure 5 and encodes a 337 amino acid long protein. The homolog protein of *Saccharomyces cerevisiae* has a very similar protein sequence (*see,* page 10, lines

11-13). The motif of the peptide is based on the 6C5 sequence starting at residue 107 (*i.e.*, EIDPID). However, this sequence is not precisely found in the peptide sequences selected by the monoclonal antibody by phage display panning. Via the phage display panning, the epitope of the 6C5 antibody was identified through a consensus sequence. By this means, the motif of the peptide was identified.

For purposes of identifying an antibody that binds to an antigen, the application provides for the class of antigens which can bind to an antibody, *i.e.* the motif of G-$X_1$-$X_2$-R. It was already well known in the art how to screen for an antibody that binds to a specific antigen. For example, the Board of Patent Appeals and Interferences has even stated that once the antigen of interest is selected, the use of that antigen in the known method of Kohler and Milstein, will result in the expected hybrid cell lines and the specific monoclonal antibodies. *Staehelin v. Secher*, 24 U.S.P.Q.2d 1513, 1517, (BPAI 1992) citing to *Ex parte Ehrlich*, 3 U.S.P.Q.2d 1011, 1015 (BPAI 1987). Additionally, the nature of the invention was developed for the field of monoclonal antibodies. Applicants direct the Office's attention to *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, a case determined in 1986 regarding technology conceived even earlier. 231 U.S.P.Q. 81, 94 (Fed. Cir. 1986). The Court held that for purposes of screening antibodies with the desired characteristics, such screening was known even at that time and would not have required undue experimentation. *Id.* This was even conceded by the Office in the later decided case, *In re Wands*, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1988). This application claims priority back to 1999, well after the facts of these cases were decided. Thus, there is no undue experimentation to screen the antibodies of the invention. Additionally, the state of the prior art with regard to screening anti-peptide antibodies was well developed at the time of the 1999 priority filings. The level of ordinary skill would have been high at the time. Guidance is provided in the application regarding preparation of antibodies (*e.g.*, page 14, line 18 to page 15, line 13) and Example 1, which characterizes the 6C5 antibody (a working example). The fact that some experimentation is necessary does not mean that the experimentation is undue. Thus, screening to determine whether an antibody binds to the peptide that falls within the class of peptides would not be undue. In view of a

*Wands* Factor analysis, a reasonably skilled artisan would not have concluded that the level of experimentation is undue.

The fact that the genus of antibodies that can bind to the sequence is large does not make the nature of the invention one of undue experimentation. Applicants provide the motif for the antigen to which the antibodies of interest can bind. Screening the antibodies themselves is routine.

Accordingly, no *prima facie* case of lack of enablement of the pending claims or the claims as amended has been adduced. Thus, Applicants respectfully request withdrawal of the rejection.

**6. Rejection Under Judicially Created Doctrine of Obviousness-Type Double Patenting**

Claims 8-13 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 and 31-34 of copending Application No. 09/913,855.

As both cases are applications, this is a provisional rejection. Moreover, Applicants traverse the rejection as claims 1-14 and 31-34 of Application No. 09/913,855 are no longer pending. Instead, claims 37-80 are pending, as submitted in a Preliminary Amendment filed November 7, 2001. In the event that the Office still deems there is an obviousness-type double patenting rejection to be made against the claims of the instant case and the claims of copending Application No. 09/913,855, Applicants request that the rejection be held in abeyance until claims are identified as allowable in the instant case.

**7. Rejections Under 35 U.S.C. § 102**

Claims 8-9 and 12 stand rejected under 35 U.S.C. §102(a) as allegedly anticipated by Ruben et al., International PCT Application WO 98/39448. It is alleged that Ruben et al. discloses peptides that meet the general formula G-$X_1$-$X_2$-R, specifically referring to SEQ ID NO: 608 (i.e., Glu-Leu-Asp-Tyr-Ile-Leu). The reference also allegedly discloses antibodies against such peptides purportedly at pages 183-184.

Applicants respectfully traverse the rejection. To anticipate a claim a single source must contain all the elements of the claim. See, for example, *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986).

It is asserted that SEQ ID NO: 608 (*i.e.,* Glu-Leu-Asp-Tyr-Ile-Leu) fails to meet the limitations of G-$X_1$-$X_2$-R. As amended, the reference does not teach all the limitations of the claimed invention. Additionally none of the new claims are taught or suggested by the cited reference. Accordingly, in view of the amendments to the claims, Applicants respectfully request withdrawal of the rejection and allowance of the claims.

## CONCLUSION

Applicant respectfully submits that the foregoing remarks demonstrate that the application is in condition for allowance and prompt notification thereof is solicited. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 02-4800. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: May 11, 2004

By: _____
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RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT ISSUED PURSUANT TO RULE 7.3
AND VIABILITY STATEMENT ISSUED PURSUANT TO RULE 10.2

**To: (Name and Address of Depositor or Attorney)**

**UVA Health System**
**Attn: Kevin C. Hazen, PhD**
**Department of Pathology**
**P.O. Box 800214**
**Charlottesville, VA 22908**

**Deposited on Behalf of:** The University of Virginia

| **Identification Reference by Depositor:** | **Patent Deposit Designation** |
|---|---|
| B cell hybridomas from mice: F6-5D8-A12 | PTA-1357 |
| B cell hybridomas from mice: F6-6C5-H4 | PTA-1358 |
| B cell hybridomas from mice: F6-5F8-E10 | PTA-1359 |

The deposits were accompanied by: __ a scientific description __ a proposed taxonomic description indicated above. The deposits were received February 17, 2000 by this International Depository Authority and have been accepted.

**AT YOUR REQUEST:** X We will inform you of requests for the strains for 30 years.

The strains will be made available if a patent office signatory to the Budapest Treaty certifies one's right to receive, or if a U.S. Patent is issued citing the strains, and ATCC is instructed by the United States Patent & Trademark Office or the depositor to release said strains.

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The viability of the cultures cited above was tested March 2, 2000. On that date, the cultures were viable.

**International Depository Authority:** American Type Culture Collection, Manassas, VA 20110-2209 USA.

**Signature of person having authority to represent ATCC:**

Barbara E Coupé

**Barbara E. Coupé, Administrator, Patent Depository**

**Date: March 3, 2000**

**cc: Malcolm K. McGowan (Atty. Docket # 032905-001)**